

Tech It Up!!
Techniques and Technologies for the Art and Science of Teaching
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Abstract

The new teaching technologies take many forms, both as learning tools and strategies. Combining new technology with traditional teaching techniques provides a variety in format presentation and learning styles, and is helpful to students in learning theory and workplace applications. The challenge as faculty is to incorporate many different teaching and learning methods in each lesson plan. Discussion focuses on why and how to divide the class session into smaller timeframe learning blocks, and how to intermingle many methods to break up the class hours. Activities that can be easily included and ways to rearrange the class schedule are addressed. By using many techniques as well as technologies, faculty provide practical and active experiences to increase students' learning.

Tech It Up!! Techniques and Technologies for the Art and Science of Teaching

"To find evidence of learning improvements, one must look to the method of instruction, or pedagogy, rather than to the technology by itself" (Twigg, 1997, p. 2). The new technologies used in teaching take many forms, both as learning strategies and tools. Combining new technology with traditional teaching techniques provides variety, both in format presentation and in learning styles. As educators of adult learners in continuing education classrooms, utilizing many teaching methods is helpful to students' learning of theory and its applications in the workplace.

Most of today's adult students are using the latest technology on-the-job. They expect their education to keep them at the forefront of knowledge. Indeed, the education purchase decision is customer service driven, especially in this marketing orientation era (Boyd, Walker, & Larreche, 1995). Students, in buying a college education, have expectations that their education will be relevant, and geared with flexibility toward their needs. This flexibility applies to what they are "sold" in terms of performance in the classroom. And yes, instructing is a performance, combining a variety of knowledge/expertise, experience, enthusiasm for teaching, and creativity in the learning process.

The importance of the performance issue has been discussed from many perspectives. David L. Kirp, winner of Berkeley's Distinguished Teaching Award, examines how at first he thought that "Teaching isn't a performance; it's shared work. Over the years, however, I've changed my mind. Teaching has to be partly a performance if it's going to register..." (Kirp, 1997, p. 15). Just how the performance aspect registers was reported recently in a study in *The Chronicle of Higher Education*. "For two semesters at Cornell University, Stephen J. Ceci taught his developmental-psychology course in exactly the same way--with one exception. The second time, he spoke more enthusiastically, varied his pitch, and used more gestures.... It was no surprise that student ratings of his enthusiasm improved...but they were stunned to find that Dr. Ceci had earned much better scores in the second semester for his level of knowledge, organization, fairness, and even the quality of the textbook" (*The Chronicle of Higher Education*, 1997, p. A10). What this indicates is that instructor performance does make a difference in students' perception of their learning. It shows that an instructor can influence many aspects of the learning experience merely by the presentation.

The challenge for faculty is to take the classroom presentations and make them into true learning experiences for students. Educational pedagogy highlights many ways to accomplish this task. One proven method is "by making learners active as soon as possible, [so that] natural consequences can occur to increase and maintain their motivation. Discussion, feedback, and comparison of learner progress with past work can positively draw the attention of adults to their learning accomplishments and enhance their sense of growing competence" (Wlodkowski, 1990, p. 116).

Indeed, "variety is stimulating and draws learner attention toward its source....Timing an activity so it can serve as a cue or a needed change in function or form of learning is probably the best way to do it. Strategies to infuse variety include:

- Changing methods of instruction, e.g., lecturing, discussion, or games
- Changing materials used for instruction, e.g. books, videotapes, or slides
- Changing interpersonal learning patterns, e.g. individual, partners, or small groups" (Wlodkowski, 1990, p. 113).

Instructor changes in function and form should challenge the students to be active learners. "Active learning is... the process of making students the center of their learning. Its techniques--including everything from writing and group discussions to simulation and collaborative learning--encourage students to learn the skills and attitudes needed to succeed in life, not just acquire factual information" (Warren, 1997, p. 16). Students who are active partners in the learning process are better at learning and retaining relevant material. It is the role of faculty to facilitate the active learning process.

Therefore, the challenge for faculty is to add some new activities to that "old" lesson plan by incorporating additional teaching techniques. For example, in a lecture, the instruction is by merely "talking" to the class. The key is to add strategies, creativity, and break up the monologue. Lectures can be a good means of providing information, indeed "a short (less than thirty minutes), carefully constructed lecture with meaningful examples, frequent summaries, simple language, and appropriate speed or delivery is most effective" (Farrah, 1990, p. 164). It is not necessary to talk for an hour or more at one time; divide the material into twenty minute blocks of time. This will allow students to maintain focus/attention, without the tendency to drift. Further, it allows the faculty member a break from continual talking, and opportunities for reflection, questions, and discussion.

Within the lecture itself, much can be added to keep the material interesting. Examples, personal stories, and anecdotes should be incorporated. Also, continual or occasional open discussion, or question and answer exchanges, can be very useful in incorporating student learning (from text material or experience) into the lecture. Often, overheads or computer-generated (Power-Point or Persuasion) graphics are a normal part of the presentation method. These technologies should be a part of presentations whether given by faculty or students. Rather than thinking about giving a lecture, consider the talk as a presentation. Students should also be encouraged to give presentations, and to do so using technological aids; this helps in their application of knowledge to the real-world environment.

To involve students, divide the lecture into many sections with additional techniques used as transitions. For transitions, students can present current event articles, chapter case studies, or chapter questions. These are easily intermingled with the lecture material, rather than all lecture presented in one segment; likewise, all article reviews, presentations, case

studies, etc., should not be presented as one segment of the classroom session. Perhaps the lesson plan can include an individual or group exercise; it is possible to have groups of two to four students answer different questions or the same question with a follow-up presentation or discussion. In other situations, small individual assignments can be prepared ahead of time for presentation in class. Individuals can discuss information on a related case study, answer chapter text questions, or present additional material (on an instructor-selected topic) that is supplemental to the text.

Role playing exercises work well, too, and can be as simple as asking students to take roles as various managers in a department or committee meeting who will plan alternatives or solve the problem, concern, or issue related to the topic of the lecture. These exercises often lead to additional material and perspectives that can be highlighted as the lecture continues. Students thus have a common experience base from which to relate the concept into applied situations.

Another aspect of these learning activities relates to the objective of teamwork - an application utilized on-the-job in committees and cross-functional work-groups. Although it seems that students dislike working in teams (it is often difficult for part-time students to find time for group meetings), some teamwork can be accomplished through use of in-class time on various exercises.

Videos are another proven method of maintaining student attention while providing valuable information in an easily understood manner. Most available videos run from 15 to 45 minutes in length, and many are useful learning tools. Also, short video clips with a follow-up discussion work well as an activity to divide up a longer lecture. Short videos on aviation-related matters and other topics are easily available; a taped segment from the news or a news-related program can provide good case study material.

Incorporating technology into the classroom helps students to be able to apply what they learn in the classroom to the work-world. A trip to the computer center or local library may be in order if students are unaware of how to "surf the net" and access the many resources available on-line. It is possible to require that some sources for student reports or current events articles be found on the Internet. Another exercise is to have students provide the "trail" of web sites required to find specific information. Having students develop computer models, especially mathematical and statistical charts and graphs, provides hands-on experience with work-world products. In other cases, a computer simulation may be available, or could be developed to carry out a specific learning task.

Technology can also be a useful means of communicating with students through the use of e-mail and home pages. Students who have e-mail at work or home could use this means to collaborate on a group project. It is possible to "facilitate group discussion and peer interaction through networked communications" (Twigg, 1997, p. 3). If a home page is available to the instructor, the syllabus and class assignments can be posted, as well as

weekly updated information including readings and/or assignments. Further, "information technology can be used to.... Combine student interaction with prepared, multimedia materials that can be accessed and used independently with interaction among the learners with faculty" (Twigg, 1997, p. 3).

Another way to integrate the latest in practical applications is to have students talk with professionals in the field. This should involve bringing into the classroom at least one guest speaker. If possible, actually taking students for a site visit helps to demonstrate what is happening today in the workplace. A field trip can incorporate a visit with a designated individual and tour of the location. The expert should spend time presenting relevant information, and students should be prepared by having written questions to ask. A tour of the facility along with further explanation can then follow. This can be used successfully with airports and a variety of positions and topics (marketing, operations, ATC), or with a corporation (training, human resources, planning); these are but a few examples. It is amazing to notice how students, especially some in the military, begin to realize the generalizability of their skills into many settings. Every course taught has its field applications (even mathematics and humanities!). Using experts helps to meet our objective of converting theory into practice for students.

In order to help students learn both theory and application, using a variety of learning activities is recommended. Upon accepting this premise, the questions become, "How to rearrange the classroom schedule to include additional learning activities? What activities can be easily included?" This is how to start. First, analyze the current classroom activities for each session. Then, take every class session and rearrange the time blocks so that the lectures are divided by other activities. Second, to the term's activities, add one guest speaker, two videos, two in-class small group exercises, and an additional short presentation by each student (case study, chapter questions, or current event article). These experiences will begin to add breadth to students' learning experiences.

The challenge as faculty is to incorporate many different teaching and learning methods in each lesson plan, to break out of our boxes and integrate a larger variety of techniques. Faculty have a responsibility to the students' learning process to build skills and knowledge which encourages their retention and graduation. The techniques and technologies used to enhance the learning process need to involve many opportunities for active learning and practical involvements. With both content and application objectives as part of each class, students will see their needs addressed at several levels and be more committed to completing their educational program. The ultimate goal of helping students learn and retain can thus be better achieved.

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